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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,127	01/25/2002	Bernd Barchmann	MAS-FIN-203	1894

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EXAMINER

SMITH, BRADLEY

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,127

Applicant(s)

BARCHMANN ET AL.

Examiner

Bradley K Smith

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2-8 and 11-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: search notes.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I (claims 1-15) in Paper No. 9 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Begis (US Patent 5,610,801). Begis discloses at least one printed circuit board (12) having contact terminals with central blind (18) openings formed therein; and at least one semiconductor component (26) having external contacts connected to said contact terminals on said printed circuit board, said external contacts of said semiconductor component protrude into said central blind openings being mechanically and electrically coupled (form-locking engagement) with said contact terminals (see column 2 lines 45-55).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Begis (US Patent 5,610,801) in view of Switky (US Patent 5,413,489). Begis discloses at least one printed circuit board (12) having contact terminals with central blind (18) openings formed therein; and at least one semiconductor component (26) having external contacts connected to said contact terminals on said printed circuit board, said external contacts of said semiconductor component protrude into said central blind openings being mechanically and electrically coupled (form-locking engagement) with said contact terminals (see column 2 lines 45-55). However Begis fails to disclose the

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printed circuit board being a multi-layered ceramic circuit board. Whereas Switky disclose the use of a multi-layered ceramic circuit board and discloses that it is well known in the art (see column 4 lines 10-30). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Begis in view of Switky in order to use a multi-layer ceramic circuit board, because multi-layered ceramic circuit boards are well known in the art.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Begis (US Patent 5,610,801) in view of Chen et al. (US Patent 4,507,834). Begis discloses at least one printed circuit board (12) having contact terminals with central blind (18) openings formed therein; and at least one semiconductor component (26) having external contacts connected to said contact terminals on said printed circuit board, said external contacts of said semiconductor component protrude into said central blind openings being mechanically and electrically coupled (form-locking engagement) with said contact terminals (see column 2 lines 45-55). However Begis fails to disclose the printed circuit board being a multi-layered plastic circuit board. Whereas Chen et al. disclose the use of a multi-layered plastic (epoxy) circuit board and discloses that it is well known in the art (see column 1 lines 10-15). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Begis in view of Switky in order to use a multi-layer plastic circuit board, because multi-layered plastic circuit boards are well known in the art.

Allowable Subject Matter

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9. Claims 2-8 and 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor suggests the central blind openings have a top region and a bottom region having dimensions than said top region, and said external contacts of said semiconductor component are in form- locking engagement with said contact terminals of said printed circuit board (claims 2 and 3), the central blind openings are a pillor shape (claim 4), the central blind openings have a truncated cone shape (claim 5), the external contacts having a rivet form in cross section (claims 6 and 7), the external contacts having a frustoconical shape (claim 8), wherein the circuit board has conductive tracks under each of said central blind openings (claim 11), wherein the external contacts are formed from a plastically deformable metal alloy and (claim 12), wherein the external contacts are formed from a silver alloy (claim 13), the external contact is made from a material that is softer than the contacts on the printed circuit board (claim 14), wherein the contact terminals are formed from a copper alloy (claim 15).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Siegel et al. (US Patent 5,994,774) disclose a form-locking semiconductor to a printed circuit board.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K Smith whose telephone number is (703) 308-6261. The examiner can normally be reached on 10-6 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (703) 308-2816. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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